APRIL/MAY 2024

23UEL11 — BASIC ELECTRONICS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. State Ohm's law.
2. State Norton theorem.
3. Give an example of a sinusoidal wave.
4. Define Q-factor.
5. What is PN junction?
6. List down the applications of filter circuits.
7. Draw the symbol of npn and pnp transistors and specify the leads.
8. Define Class A power amplifier.
9. Mention the any two characteristics of negative feedback.
10. What is gain stability?

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SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain Kirchhoff's current and voltage laws.

Or

(b) Illustrate in detail superposition theorem.

12. (a) Write a short note on RMS and average value.

Or

(b) Explain the series reactance and resistance.

13. (a) Interpret the characteristics of junction diode.

Or

(b) Elucidate the regulated power supply using Zener diode.

14. (a) Construct the basic logic gates circuit using diodes and transistors.

Or

(b) Explain the push-pull amplifier with a neat diagram.

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15. (a) Describe the characteristics of a transistor in CE mode.

Or

(b) Enumerate the input and output resistance in negative feedback.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the Star and Delta conversion.

17. With neat sketch, explain the parallel resonance circuit.

18. Derive an expression for the efficiency for a full wave rectifier.

19. Discuss the operation of emitter follower.

20. Explain the analysis of voltage and current in feedback amplifier circuits.

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